

1. An InfiniBand switch, comprising:
a forwarding table; and
5 a plurality of DLIDs and a set of forwarding instructions in the forwarding table,
wherein each of the plurality of DLIDs corresponds to one of a plurality of routing trees
and one of a plurality of end nodes in a network.

2. The InfiniBand switch of claim 1, wherein the network is a Clos network.

3. The InfiniBand switch of claim 1, wherein the plurality of routing trees
comprises for each spine node in the network, a shortest path from the spine node to each
of the plurality of end nodes.

4. The InfiniBand switch of claim 1, wherein each of the plurality of routing trees
comprises at least a portion of a plurality of InfiniBand switches in the network and
corresponding plurality of links that form a shortest path from one of the plurality of end
nodes to a spine node of the network.

5. An InfiniBand switch comprising a computer-readable medium containing
computer instructions for instructing a processor to perform a method of populating a
forwarding table, the instructions comprising:

calculating a plurality of routing trees for the InfiniBand switch;
calculating a plurality of DLIDs and a set of forwarding instructions for the
25 InfiniBand switch, wherein each of the plurality of DLIDs corresponds to one of the
plurality of routing trees and one of a plurality of end nodes in a network; and
populating a forwarding table of the InfiniBand switch with the plurality of DLIDs
and the set of forwarding instructions.

6. The InfiniBand switch of claim 5, wherein the network is a Clos network.

7. The InfiniBand switch of claim 5, wherein each of the plurality of end nodes
comprises a destination, and wherein the destination is identified by a BaseLID.

8. The InfiniBand switch of claim 5, wherein calculating the plurality of routing trees comprises for each spine node in the network, calculating a shortest path from the spine node to each of the plurality of end nodes.

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9. The InfiniBand switch of claim 5, wherein each of the plurality of routing trees comprises at least a portion of a plurality of InfiniBand switches and corresponding plurality of links in the network that form a shortest path from one of the plurality of end nodes to a spine node of the network.

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10. The InfiniBand switch of claim 9, wherein the shortest path is loop-less.

11. An InfiniBand switch comprising a computer-readable medium containing computer instructions for instructing a processor to perform a method of forwarding a packet within a network, wherein the packet is created at one of a plurality of sources and is addressed to one of a plurality of destinations within the network, the instructions comprising:

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populating a forwarding table of the InfiniBand switch with a plurality of DLIDs and a set of forwarding instructions; and

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the packet following a path through the InfiniBand switch from the one of the plurality of sources to the one of a plurality of the destinations, wherein the InfiniBand switch forwards the packet according to one of the plurality of DLIDs assigned to the packet, and wherein the one of the plurality of DLIDs assigned to the packet corresponds to one of the plurality of DLIDs and the set of forwarding instructions in the forwarding table.

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12. The InfiniBand switch of claim 11, wherein the network is a Clos network.

13. The InfiniBand switch of claim 11, wherein the network operates as a strictly non-interfering network.

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14. The InfiniBand switch of claim 11, wherein the packet following the path comprises looking up the one of the plurality of DLIDs assigned to the packet in the forwarding table at the InfiniBand switch.

- 5 15. The InfiniBand switch of claim 11, wherein the packet following the path comprises the InfiniBand switch forwarding the packet in accordance with the one of the plurality of DLIDs assigned to the packet and the set of forwarding instructions as found in the forwarding table of the InfiniBand switch.